United States Environmental Protection Agency
Region V
POLLUTION REPORT

Date: Monday, December 01, 2008
From: Syed Quadri, RPM

Subject: Initiation of Action
Vulcan Louisville Smelting Company Site
1 Tantalum Place, North Chicago, IL
Latitude: 42.321
Longitude: -87.8453

POLREP No.:	1	**Site #:**	A527
Reporting Period:	10/31/2008 to 11/25/2008	**D.O. #:**	
Start Date:	10/31/2008	**Response Authority:**	CERCLA
Mob Date:	10/31/2008	**Response Type:**	Non-Time-Critical
Completion Date:	12/21/2008	**NPL Status:**	Non NPL
CERCLIS ID #:		**Incident Category:**	Removal Action
RCRIS ID #:		**Contract #**	

Site Description

The Site is located in North Chicago, Lake County and consists of two parcels. The former Fansteel property is located at 1 Tantalum Place, North Chicago, Lake County, Illinois. The Fansteel parcel is bounded by the R. Lavin & Sons facility to the east, 22nd Street (Martin Luther King Jr. Street) to the south, the Vacant Lot parcel to the west, and the Elgin, Joliet & Eastern Railroad to the north.

The Vacant Lot parcel is a 6.4 acre parcel of land bordered by the Fansteel facility on the east, the Elgin, Joliet & Eastern Railroad to the north, Martin Luther King Jr. Street (22nd Street) to the south and Commonwealth Avenue on the west. The Vacant Lot is bisected by Pettibone Creek (Creek), an intermittent creek.

Beginning in approximately 1910, Vulcan Louisville Smelting Company (VLS) owned and operated the areas that currently comprise the Vacant Lot Site, the Fansteel facility, and the adjacent R. Lavin & Sons plant.

The federal government purchased an 8-acre portion of the VLS property in 1942 through its Defense Plant Corporation, and authorized and financed the construction of the Fansteel facility. A Fansteel subsidiary, the Tantalum Defense Corporation, was formed and leased the site from the federal government. The Tantalum Defense Corporation supplied the government with various materials needed during World War II. The federal government owned the facility from 1942 to 1947. The facility was subsequently sold by the federal government to Fansteel in 1947. The Fansteel Metals Division and Fansteel VR/Wesson Division operated at the site between 1954 and 1990. The main facility operations included the production of specialty metals and related products in addition to powder metallurgy operations. Production activities at the North Chicago Facility ceased in 1990, although Fansteel continued to maintain its offices there until 2005. The site contained a variety of industrial buildings which have now all been razed to the ground. The Fansteel facility is enclosed by security fencing.

In 1936, VLS transferred the Vacant Lot property to the Chicago North Shore and Milwaukee Railroad Company. By 1954, the current Vacant Lot property was sold to an individual who developed the western portion of the property as a parking lot. The owner reportedly solicited fill materials to be placed at the Site. The source, quantity and nature of the materials is not well documented. However, reports of foundry sand and tailings deposition at the Site is consistent with descriptions of materials observed on the Site.

The owner later transferred title to an Illinois land trust. In 2000, the Vacant Lot property was acquired by BREMS Realty, L.L.C. (BREMS), which leased it to EMCO Chemical Distributors, Inc. (EMCO). Before purchasing the Vacant Lot, BREMS entered into a Prospective Purchaser Agreement with the U.S. EPA and the prior owners entered a de minimis settlement with the U.S. EPA. Under those agreements, the sales proceeds of $35,000 were paid to the U.S. EPA to reimburse a portion of its response costs. Currently EMCO uses the west side of the Vacant Lot (west of the Creek) for employee parking, while the area east of the Creek is unused.

The Vacant Lot parcel is vegetated with bushes, grasses and weeds. The southern two-thirds of the parcel has a weathered concrete/gravel layer, under approximately 6 inches of top soil. Pettibone Creek, which runs diagonally across the property, is in a relatively steep-sided ravine and flows to the south on Site, and then flows east to Lake Michigan (approximately 1.5 miles from the Site). The Creek receives water through the North Chicago stormwater discharge and a ditch. The Creek is also fed by rain water and outfalls from EMCO (to the west) and the Fansteel facility.

General topography across the Site is uniformly flat, with the exception of the Creek and a relatively steep rise to the railroad bed along the northern border.

The presence of contamination at the Site first came to the attention of the U.S EPA due to an underground fire at the Vacant Lot on June 12, 1988. Firefighters responding to the fire noticed that the ground was unusually hot and the water they were applying was causing the ground to bubble, as if the water was boiling. The firefighters allowed the ground fire to burn itself out because of the unknown nature of the fire and the possible hazards of applying more water. Samples collected at the time of the fire revealed 43.5 milligrams per liter (mg/L) leachable lead, exceeding the RCRA regulatory limit of 5 mg/L; therefore, characterizing the soil as a RCRA hazardous waste when it was excavated.

In September of 1994, the U.S. EPA conducted a site assessment at the Vacant Lot at the request of the IEPA. Several soil and sediment samples were collected, including samples from the location of the previous fire incident. Generally, elevated levels of heavy metals (including arsenic, beryllium, and lead), TCE, and PCBs were detected at the Site.

Based on the Site Assessment results, the U.S. EPA began a non-time critical removal action at the Vacant Lot in 1996 and completed its Engineering Evaluation/Cost Analysis (EE/CA) on October 30, 1997. The EE/CA investigation concluded that all soil at the Vacant Lot, excluding two small areas, was generally contaminated up to a 2-foot depth with elevated concentrations of lead; the source/fill area on the northeast portion of the Vacant Lot was contaminated with TCE to a 4-foot depth, and with lead to a 9-foot depth; a small area was contaminated with PCBs to a 9-foot depth; the eastern perimeter of the Site contained TCE contamination; the creekbed was contaminated with lead and with benzo(a)pyrene to depths of 3-6 feet; and within the northern one-third of the Site area, groundwater contamination of DCE, vinyl chloride, and other volatile organic compounds could potentially be attributed to the source/fill area. The remainder of the northern one-third of the Site area had TCE contamination likely attributed to a plume originating at the Fansteel property.

U.S. EPA excavated, treated and disposed of approximately 24,245 cubic yards of lead-contaminated soils requiring stabilization; 1000 cubic yards of PCB-contaminated soils; 20,000 cubic yards of other contaminated soils; and 4,500 cubic yards of contaminated sediments.

The information provided by the on- and off-site environmental investigations identified that the eastern edge of the Vacant Lot had TCE and manganese contamination in groundwater that appeared to be caused by a source area located on the Fansteel property. As a result, the U.S. EPA issued an order on September 21, 2000, requiring Fansteel to perform an EE/CA on its property.

Field work associated with EE/CA Work Plan was completed on June 11, 2001. Fansteel filed a bankruptcy petition on January 15, 2002. By that time, Fansteel had completed a draft EE/CA report. U.S. EPA subsequently provided extensive comments and after significant revisions the final EE/CA Report was approved by the U.S. EPA on October 12, 2005. The EE/CA investigation identified elevated levels of cadmium, lead, TCE and vinyl chloride in soils and elevated levels of lead, TCE, vinyl chloride, cadmium and other VOCs in groundwater on the Fansteel property.

The City of North Chicago has acquired the majority of the Site in order to foster redevelopment of the Fansteel parcel and the portion of the Vacant Lot parcel east of Pettibone Creek.

Current Activities

- Mobilized personnel & equipment on October 31, 2008.
- Excavated approximately 9 cubic yards of TCE-contaminated soil from Former Drum Storage area
- Excavated approximately 5 cubic yards of lead-contaminated soil from Mid-Eastern edge of Chemical Building A area
- Based on pre-removal sampling, approximately 50 feet wide and 100 feet long hot spot area was delineated for excavation at HWMU area. Pre-removal sample results showed contamination up to 15 to 18 feet. Based on sample results, top 7 feet soil contained less than 58 mg/Kg TCE and was considered to be non-impacted. Soil from 7 feet below ground surface (bgs) up to 18 feet bgs had more than 58 mg/Kg TCE and was considered to be impacted soil and subjected to proper disposal.
- Based on pre-removal sampling, approximately 65 feet wide and 125 feet long hot spot area was excavated at Vacant Lot area. Pre-removal sample results showed contamination up to 8 feet. Based on sample results, top 2 feet soil contained less than 58 mg/Kg TCE and was considered to be non-impacted. Soil from 2 feet below ground surface (bgs) up to 8 feet bgs had more than 58 mg/Kg TCE and was considered to be impacted soil and subjected to proper disposal.
- Excavated approximately 1,600 cubic yards of non-impacted soil and 2,100 cubic yards of impacted soil from HWMU area. Approximately 5,300 square feet of area was excavated at HWMU for an average depth of 15 feet.
- Pumped out approximately 63,000 gallons of water resulted from groundwater infiltration from HMWU area on to 3 frac tanks prior to backfill and water was staged for disposal at the site. Sample results for the water reported TCE at 25 mg/L. Approximately 57,625 gallons of staged water was disposed as Hazardous Waste Liquid to Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH.
- Two stockpile sample results collected for the non-impacted soil reported TCE at less than 58 mg/Kg action level. Non-impacted soil was pushed back in to the HWMU excavation and clean recycled concrete material was placed on top, compacted and restored to original condition.
- Excavated approximately 300 cubic yards of non-impacted soil and 2,200 cubic yards of impacted soil from Vacant Lot area. Approximately 9,700 square feet of area was excavated at Vacant Lot area for an average depth of 6 feet.

- Impacted Soil from HWMU area was split into four 500 cubic yards piles and staged for disposal. Impacted Soil from HWMU area soil failed TCLP for TCE and was characterized as Hazardous waste solid and subjected to disposal at Subtitle C landfill. Vacant Lot area were split into five 500 cubic yards piles and staged for disposal.
- Demobilized personnel for thanksgiving holidays on November 25, 2008.

Planned Removal Actions

- Complete water disposal and de-mob frac tanks
- Begin soil disposal of HWMU area to Subtitle C landfill
- Characterize Vacant Lot soil for proper disposal and dispose
- Delineate PCB courtyard to determine extent of excavation, complete excavation and backfill
- Backfill Vacant Lot area with clean soil

Next Steps

Complete actions noted above.

Key Issues

- To reduce the disposal cost of HWMU area impacted soil, a power screening operation was proposed to separate rocks, bricks and boulders from soil material using power screening device. Powerscreen Model Chieftain 1400 equipment was mobilized to the site and screening operation was conducted. Since the soil was very wet, rocks, bricks and boulders could not be separated from the conglomerated soil clusters. Powerscreen operation was deemed unsuccessful and abandoned.
- Large volume of groundwater infiltrated into the HWMU area excavation and the costs for this water pump-out and disposal was not planned earlier.
- Soil excavated from Vacant lot area had high TCE levels more than what was originally anticipated prior to the removal action. Cost for Vacant Lot disposal is expected to be more than the initially budgeted cost. So, total costs for the removal action is expected to increase.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining
Extramural Costs				
RST/START	$77,000.00	$46,141.40	$30,858.60	40.08%
Intramural Costs				
Total Site Costs	$77,000.00	$46,141.40	$30,858.60	40.08%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

Disposition of Wastes

Waste Stream	Quantity	Manifest #	Disposal Facility
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310598	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	5,000 G	310594	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	5,000 G	310595	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	5,100 G	310596	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310586	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310585	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310587	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310588	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310590	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310591	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,000 G	310592	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	2,225 G	4774588JJK	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz. Waste Soild, n.o.s., (TCE), 9, NA3077, PG III, D040	3,900 G	4774590	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH
Haz Waste Liquid, n.o.s, (TCE), 9, NA3082, PG III, D040	4,400 G	4774589	Clean Harbors - Spring Grove Resources Recovery, Cincinnati, OH

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